and as he feels the necessity of it, without hazard of helium asphyxiation, because the patient himself controls the inhalation and can remove the mask at will.

As the patient breathes the mixture the total volume diminishes at the rate that oxygen is used up in an ordinary basal metabolism test. The expired carbon dioxid is absorbed by the soda lime, and I find it necessary only to replace oxygen into this system.

I have had many satisfactory results, most frequently in promoting the expectoration of the usually "difficult to raise" sputum. I believe that this technique will find use for many chest diseases.

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CUTANEOUS HISTAMIN REACTION IN DIAGNOSIS OF HYSTERIA

By MAX J. GOODMAN, M.D.
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OUT of the study of peripheral vascular diseases has come the cutaneous histamin reaction, so useful in diagnosis and prognosis of these conditions, and of such great value in aiding the surgeon to determine the level at which he must amputate an affected limb. When histamin phosphate (1/1000) is injected intracutaneously, the response of the tissues occurs in three stages: first, the trauma of the needle and the contact of the histamin produces a small red area which is immediately (within one minute) masked by a wheal resembling a mosquito bite. This second reaction is due to the irritation of the drug locally and is entirely independent of the nerve supply. It is associated with a change in permeability of the small vessels, allowing fluids to go from the blood into the wheal. Within five minutes after appearance of the wheal a reddened area surrounds it. This is called the arterial flare and is due to capillary dilatation. It is purely a reflex phenomenon, and will occur only if the peripheral sensory-nerve circuit through the dorsal root is intact. If the nerve is sectioned or destroyed by disease, or if the dorsal root is destroyed by a lesion extending from the spinal cord, the arterial flare does not appear, allowing eight days for degeneration of the nerve and loss of reflex arc.

In peripheral vascular disease there is a sensory nerve degeneration which parallels the vascular obliteration, and because of this the test has been useful in determining the extent of the disease. More recently, however, the test has come into use for the diagnosis of traumatic neurosis and hysteria. In addition to the medical value, it may also be useful in medico-legal work because of simplicity of administration, and because there is something which, if shown to a jury of laymen, will mean more than mere verbal expert testimony.

The following case is one in which this test was used to confirm a diagnosis of hysteria:

REPORT OF CASE

The patient, a male, age forty-four, German, married. Occupation, blacksmith. In June, 1937, he sustained a compound fracture of the right tibia and fibula. The external wound healed without infection, and the fractures were well united. He continued to complain of pain over the fracture site, so in February, 1938, an exostosis was removed from the anterior tibial surface at the fracture site. Following this operation, there was some relief of pain. Progress was uneventful until March 28, 1938. While celebrating the purchase of a saloon the patient celebrated too diligently and, in the course of events, sustained an injury to his right upper extremity, including several abrasions on the right hand. On April 4, 1938, suppurative glands in the right axilla were incised and drained. At this time the patient began to show his tendencies by attempting to induce (unsuccessfully) the insurance company to pay for his hospitalization for the care of his arm injury. He made an uneventful recovery from this last injury. On April 29, 1938, his case was closed and he was apparently cured.

On July 18, 1938, he reappeared in our office, stating that he had been having severe pain in his right leg and arm for the past week. This was within a few days after he had unsuccessfully tried to induce the insurance company to reopen his case. Examination at this time showed that motor function in all extremities was good, except for a slight limp in the right leg. There was a coarse tremor in the right hand. Reflexes were normally active. Wassermann was negative. There were no visual disturbances. Eye movements were normal. Eye grounds were normal. Pupils reacted normally. Spinal fluid was negative. Blood pressure, 140/80. An interesting fact, and one not mentioned by the patient, was that there was an anesthesia on the entire right side of the body, excluding the face. The left side of his body was hypersensitive. A diagnosis of hysteria was made.

The patient was checked by the histamin reaction in the following manner: The drug used was histamin phosphate (1/1000). One minim was injected intracutaneously in three places in both lower extremities, one place on both sides of the abdominal wall, and in two places on the upper extremities. The wheal appeared within one minute. About eight minutes later the arterial flare appeared bilaterally in all points of injection except one. This latter was at the site of the original injury and near the operative scar, where we would normally expect some nerve destruction. However, in all other areas, the reaction proved an intact nerve circuit. We know that the patient is not malingering, because with his inability to stand pain he could not have tolerated the severe pain tests to which his affected side was subjected. The test seemed to confirm our diagnosis of hysteria.

COMMENT

When the cutaneous histamin test reacts normally by the formation of its third stage, the arterial flare, we have conclusive evidence that the peripheral sensory nerve to that part is not degenerated. However, the test must be performed after the eight-day period required for nerve degeneration to take place. The reaction is, therefore, of value in differentiating between anesthesias due to organic lesions and hysteria. In conclusion, we wish to emphasize that we do not feel that this test is entirely diagnostic, but that it is an excellent means of confirmation after the diagnosis of hysteria has been established.

SENSITIZATION TO SULFANILAMIDE
REPORT OF CASE

By ROBERT A. STEVEN, M.D.
San Francisco

FEVER resulting from a large amount of sulfanilamid, either given in one large dose or repeated smaller doses,[1,2] has been reported several

1 Hageman, P. O., and Blake, Francis G.: A Specific Febrile Reaction to Sulfanilamid, Drug Fever, J. A. M. A., 109:1 (Aug. 28), 1937.

2 Long, P. H., and Bliss, Eleonar A.: Para-Aminobenzenesulfonamid and Its Derivatives, Arch. Surg., 34:351 (Feb.), 1937.

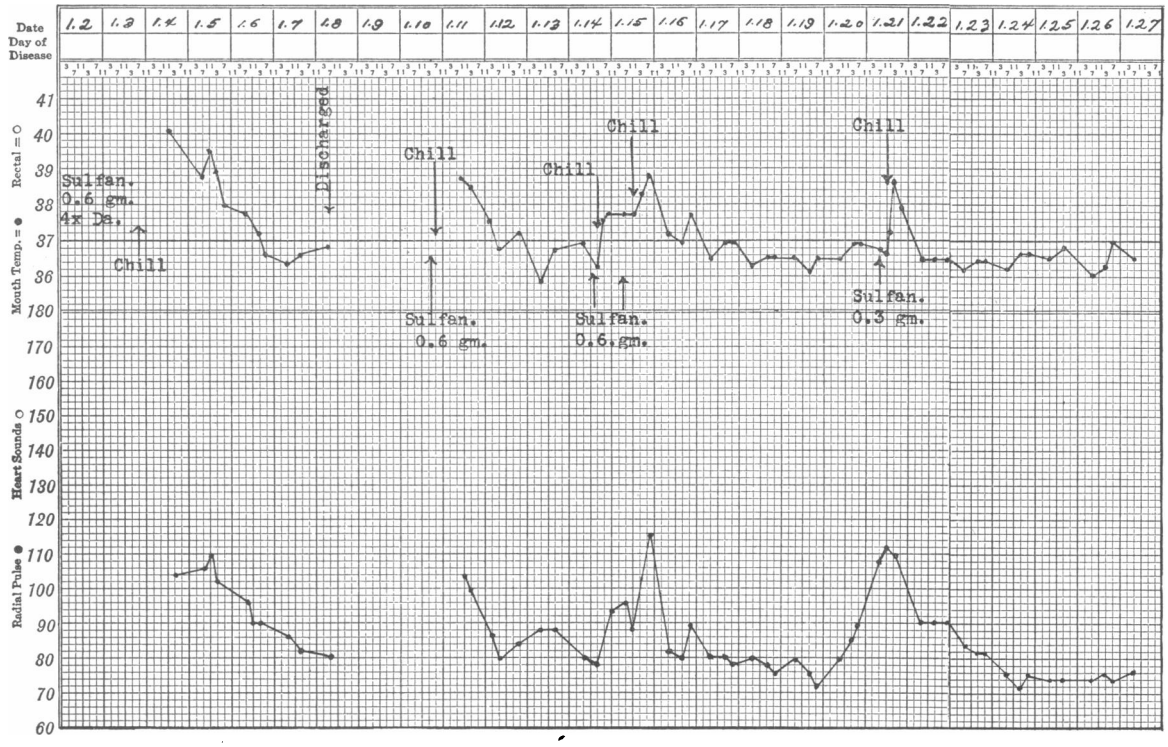

Chart 1.—Graphic record, showing temperature rise after sulfanilamid.

times. When we began to write up this case report, we had been unable to find an instance of chills and fever from a single small dose. More recently, however, Gillette[8] reports: "Sulfanilamid in total dosages, varying from 60 to 420 grains, caused chills and fever in about one per cent of patients. If a patient once developed chills and fever from the drug, small doses would invariably cause reappearance of the symptoms, even when given some five or six days after the sulfanilamid had been discontinued." This coincides exactly with our experience in this case.

REPORT OF CASE

Mr. H. C., married, Polish tailor, age 50, entered on the medical service of the Franklin Hospital on January 4, 1938, complaining of a head cold (one month), muscle and joint pains (three weeks), loss of appetite (three days), and some loss of weight. He denied G. C. Positive physical findings were: Temperature, 104 degrees; appearance flushed and sleepy; very carious teeth; uvula red and edematous; slightly increased splenic dullness and sharp splenic edge palpable one-quarter inch below costal margin. Laboratory reports were: Urine—Albumin, one plus and occasional white blood cells. Blood count—Hemoglobin, 14.2 grams; red blood cells, 4.12; white blood cells, 8,200; polymorphonuclear neutrophils, 68 per cent; lymphocytes, 27 per cent; large monocytes, 5 per cent; blood Wassermann and Kahn negative; blood culture negative; no agglutination of typhoid, Paratyphoid A and B, or melitensis. He recovered rapidly, and was discharged on January 8 with a diagnosis of influenza.

He was readmitted on January 11, when he admitted pertinent facts previously denied. He had contracted gonorrhea four weeks prior to first entry, and had been taking sulfanilamid, .6 gram, four times daily for one week prior to first entry, and on the evening before his first entry he had lost his appetite, had diarrhea, and a definite chill followed by fever. On the day before his second entry, he took one dose of the drug (.6 gram) and two hours later had a chill, felt hot, and had abdominal distress. On entry, temperature was 102 degrees; spleen was somewhat larger; hemoglobin was 11.8 grams, red blood cells, 3.47; white blood cells, 14, 100 with 88 per cent polymorphonuclear neutrophils and 10 per cent lymphocytes; urine showed one to three white blood cells and red blood cells. Patch test with sulfanilamid was negative.

After getting this history we decided, with his permission, to give the patient test doses of sulfanilamid at suitable intervals to determine, if possible, the etiologic rôle of the drug in these reactions. The procedure and results are clearly set forth in the accompanying graphic record. We had intended to proceed further with minute doses, but the patient had to return to work. He had taken no more of the drug and had had no further fever when contacted on July 15.

We believe that the reactions described here are manifestations of an acquired sensitization to sulfanilamid.

384 Post Street.

[8] Gillette, R. E.: Sulfanilamid: Its Use in Upper Genital Tract Infections in the Female, Calif. and West. Med., 49:3 (Sept.), 1938.

Dangers of Snuff.—Snuff is a primary irritant and causes a burning feeling when first inhaled, *The Journal of the American Medical Association* for May 6 says. Later on, as the habit is formed, the burning feeling is replaced by a sense of exhilaration. When the snuff is inhaled there results, as with the inhalation of all irritating materials, an excess flow of mucus and serum, which is followed immediately by sneezing and blowing of the nose, thus clearing the passages. However, there are three dangers in the use of snuff. In long continued cases there is a tendency to chronic inflammation of the mucous membrane of the nose; polyps (soft, tumor-like growths) seem to occur rather frequently in users of snuff, and because of the excess of sneezing and blowing there is a distinct liability to infection of the sinuses.